Report

Hazardous Waste Storage Pad Closure John F. Queeny Plant

Monsanto Company St. Louis, Missouri

November 1994



5000 Cedar Plaza Parkway, Suite 211 St. Louis, Missouri 63128



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A Photographs

Exhibit

A Analysis report

1. Introduction

O'Brien & Gere Engineers, Inc. was retained by Monsanto Company for the closure of the hazardous waste storage pad located at the John F. Queeny Plant at 1700 South Second Street in St. Louis, Missouri. The purpose of this report is to provide certification that the facility has been closed, as required by 40 CFR 265.115. This report includes a description of the facility, documentation of the closure activities, and a certification of closure.

1.1. Facility description

The hazardous waste storage pad is located on the north end of the John F. Queeny Plant. The facility consists of a coated, concrete pad with dimensions of 30 ft by 50 ft. The ends of the pad are sloped toward its center, and the sides of the pad are curbed. The facility is covered with a corrugated fiberglass roof and has corrugated fiberglass walls on both sides. A photograph of the facility is included in Appendix A.

The hazardous waste storage pad is a RCRA permitted facility which was used for the storage of drums containing hazardous waste. The RCRA facility identification number is MOD004954111. An inventory of wastes which have been stored at the facility is provided in Table 1-1.

Table 1-1. Hazardous waste inventory

Methanol Acetone Butanol Hydraulic Fluids L-Aspartic Acid

Hydraulic Fluid Cartridge p-Nitrophenetole Filter Cartridge

Maleic Anhydride p-Nitrophenetole

Oil

Paint Solvents

L-Aspartic Dust Collector Bag

L-Aspartic Catalyst

Ethanol

Perchloroethylene Isopropanol Toluene

Ethylene Glycol and Water

Hexane Xylene

Contaminated Protective Gear Activated Carbon Contaminated with

p-Nitrophenetole

Dioxin contaminated debris Aspirin Floor Sweepings

Phenol

Acetic Acid Filter Cartridge

Methyl Salicylate Dimethylformamide Perchloroethylene Still Residue Dichloroethane Still Residue

Lasso™

TCC Floor Sweepings

Aniline

Laboratory Solvents
Outdated Cans of Paint

Contaminated Laboratory Material Laboratory Waste Tank Solvents

Oil Filters

Empty Sulfuric Acid Containers Garage Drain Rinse Water MON 70600 Filtrate Wash Sodium Hydroxide and Water

Acetic Acid Wash Fluorescent Light Bulbs

Batteries (flashlight, radio, pager)
3-Ring Phenoxyphenol KOH Wash
3-Ring Phenoxyphenol Quench
Chloro 3-Ring Phenol Water
m-Phenoxyphenol Residue
m-Phenoxyphenol Quench Water

OS-138 Quench

m-Phenoxyphenol Wash Water

OS-138 Washes OS-138 Filter Cake Crushed Lab Glass Aerosol Cans

Source: Monsanto Company

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2. Closure

The closure of the hazardous waste storage pad was performed by OHM Remediation Services Corporation (OHM) under the observation of O'Brien & Gere Engineers, Inc. Mr. Rudi Sanchez was the Site Supervisor for OHM, while O'Brien & Gere Engineers, Inc. was represented by Ms. Julie Lowe, P.E., Project Engineer. The closure was performed on October 20 and 21, 1994.

The procedures used to close the facility were selected to meet the closure performance standards of 40 CFR 264.111 and 264.178. The procedures were intended to remove hazardous wastes and hazardous waste residues from the concrete floor. The following section provides a description of those procedures. Photographs of the closure activities are provided with this report in Appendix A.

2.1. Procedures

Prior to OHM's mobilization to the hazardous waste storage pad, Monsanto Company removed hazardous waste containers from the facility. The concrete floor was observed to be stained in some areas. Also, the concrete coating was pitted in some areas and was starting to blister in other areas. However, evidence of severe damage to the floor, such as cracks, was not observed. Inspection of removed chips of concrete coating indicated that the stains had not penetrated the coating.

The concrete floor was cleaned with cold water using a high pressure water nozzle. The floor was subjected to two complete cleanings. The hazardous waste storage pad walls were not cleaned. Rinse water generated by the cleaning was contained on the pad and pumped into holding tanks. After the cleaning was completed, the rinse water was pumped into ten 55 gallon steel drums for disposal by Monsanto Company.

2.2. Sample collection

In order to evaluate the effectiveness of the closure activities, a sample of rinse water was collected during both cleanings. The samples were respectively identified as "Rinse 1" and "Final Rinse." The samples were collected in emptied distilled water containers (high density polyethylene). After collection, the samples were transferred to laboratory supplied sample containers. In addition to the two rinse water samples, an ambient blank sample was also collected by transferring distilled water into sample containers supplied by the laboratory. The ambient blank sample was collected just prior to the "Final Rinse" sample collection.

The sample containers were appropriately labeled and packed on ice in an ice chest. A chain of custody and analysis request form was completed, and the samples were shipped via overnight courier to Savannah Laboratories & Environmental Services, Inc. in Savannah, Georgia.

2.3. Analysis results

The rinse water samples were analyzed for volatile organic compounds, semivolatile organic compounds, pesticides, PCBs, dioxin, and RCRA heavy metals. The ambient blank sample was analyzed for volatile organic compounds only. The analysis report for the samples is included with this report as Exhibit A.

Volatile organic compounds, pesticides, PCBs, and dioxin were not detected in the rinse water samples. Results for RCRA heavy metals are summarized in Table 2-1. As shown in the table, concentrations of metals in the samples did not exceed maximum RCRA toxicity characteristic leaching procedure (TCLP) limits.

Table 2-1. Metals analysis results

Constituent	Rinse 1 (mg/L)	Final rinse (mg/L)	TCLP limit (mg/L)
Arsenic	< 0.010	< 0.010	5.0
Barium	0.080	0.018	100.0
Cadmium	0.0055	< 0.050	1.0
Chromium	0.019	< 0.010	5.0
Lead	0.18	0.0094	5.0
Selenium	< 0.010	< 0.010	1.0
Silver	< 0.010	< 0.010	5.0
Mercury*	< 0.20	2.4	200

^{*}Results are in ug/L.

Table 2-2 shows analysis results for those organic constituents which were detected in the rinse water samples. The concentrations of the constituents are not indicative of a threat to human health or the environment. A release of hazardous constituents to the ground or surface waters or to the atmosphere is not likely to result from the presence of the constituents at the detected concentrations on the surface of the concrete floor. The constituents detected are not included in the toxicity characteristic waste list set forth in 40 CFR 261.24.

Table 2-2. Organic analysis summary

Constituent	Rinse 1 (ug/L)	Final rinse (ug/L)
Butylbenzylphthalate	33	13
bis(2-Ethylhexyl)phthalate	< 10	16
Phenol	58	32

Source: Savannah Laboratories & Environmental Services, Inc.

Source: Savannah Laboratories & Environmental Services, Inc.

2.4. Conclusions

The closure performance standards of 400 CFR 264.111 and 264.178 have been attained by the closure activities. Hazardous waste containers have been removed from the facility, and further maintenance of the facility is not required. There is no evidence that the integrity of the concrete floor and curbs has been compromised. Likewise, evidence of a release of hazardous materials on the asphalt surrounding the facility is not present. The chemical analyses results for the rinse water samples indicate that the release of hazardous constituents to the ground or surface waters or to the atmosphere is not likely to occur. Therefore, the closure of the facility is protective of human health and the environment.

3. Certification

I certify that I have personally examined and am familiar with the information submitted in this document, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. Based on the information contained in this document, it is my understanding that the closure of the hazardous waste storage pad at the Monsanto Company John F. Queeny Plant has been performed in accordance with federal and Missouri hazardous waste management laws and applicable standards, rules, and regulations.

Respectfully submitted,

Dean L. Palmer, P.E.

Vice President

Missouri Registration No. EN 020425

Prepared by:

Ronald R. LePlatt, P.E.

Project Engineer

Missouri Registration No. EN 026006

Reviewed by:

Julie J. Lowe, P.E.

Project Engineer

Missouri Registration No. EN 026288

Stephen Honduson 11/22/94 Signature of Owner/Operator

Name of Owner/Operator

Appendix A: Photographs









MONSANTO COMPANY ST. LOUIS, MISSOURI HAZARDOUS-WASTE STORAGE PAD CLOSURE PROJECT 2600.027

PHOTOGRAPHIC LOG SHEET

Date: 10/20/94

Description: Cleaning of floor using high-pressure water nozzle. Collection tanks are located on truck. Stee drums were used for final containerization.

Photo by: JJ Lowe

Date: 10/20/94

Description: Collection of rinse-water sample. Hose used to remove water from pad.

Photo by: JJ Lowe

Date: 10/20/94

Description: Hazardous-waste Storage Pad after cleaning. Note curbed sides, walls, and roof.

Photo by: JJ Lowe



MONSANTO COMPANY ST. LOUIS, MISSOURI HAZARDOUS-WASTE STORAGE PAD CLOSURE PROJECT 2600.027

PHOTOGRAPHIC LOG SHEET

Date: 10/20/94

Description: Hazardous-waste Storage Pad floor after cleaning.

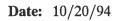
Photo by: JJ Lowe



Date: 10/20/94

Description: Closeup of Hazardous waste Storage Pad floor after cleaning

Photo by: JJ Lowe



Description: Closeup of Hazardous waste Storage Pad floor, showing

pitted area.

Photo by: JJ Lowe



Exhibit A: Analysis report



LOG NO: S4-45751

Received: 22 OCT 94

Mr. Julie Lowe O'Brien & Gere 5000 Cedar Plaza Parkway, Suite 211 St. Louis, MO 63128

Project: 2600.027.911/Monsanto-RCRA Pad

LOC NO	CAMPLE DESCRIPTION I	REPORT OF RESULTS		DATE/ TIME SAMPLED	Page 1
	SAMPLE DESCRIPTION , I			TIME SAMPLED	
45751-1	Rinse 1			10-20-94/1215	
	Final Rinse			10-21-94/0945	
PARAMETER				45751-2	
Weletiles					
	by GC/MS (8240) hane, ug/l		<10	<10	
	nane, ug/l		<10		
	oride, ug/l		<10		
_	nane, ug/l		<10		
	Chloride (Dichlorometha	ne). ug/l		<5.0	
Acetone,		,	<25		
	sulfide, ug/l		<5.0	<5.0	
	oroethene, ug/l		<5.0	<5.0	
	oroethane, ug/l		<5.0	<5.0	
Trans-1,2	-Dichloroethylene, ug/l		<5.0	<5.0	
cis-1,2-I	ichloroethylene, ug/l		<5.0	<5.0	
Chlorofor	m, ug/l		<5.0	<5.0	
1,2-Dichl	oroethane, ug/l		<5.0	<5.0	
2-Butanor	ne (MEK), ug/l		<25	<25	
1,1,1-Tri	.chloroethane, ug/l		<5.0	<5.0	
Carbon Te	etrachloride, ug/l		<5.0	<5.0	
-	etate, ug/l		<10	<10	
Bromodich	loromethane, ug/l		<5.0	<5.0	
1,1,2,2-7	Cetrachloroethane, ug/l		<5.0	<5.0	
	oropropane, ug/l			<5.0	
	-Dichloropropene, ug/l		<5.0		
Trichloro	pethene, ug/l		<5.0	<5.0	

LOG NO: S4-45751

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Project: 2600.027.911/Monsanto-RCRA Pad

	REPO	RT OF RESULTS		Page 2
			DATE/	
LOG NO	SAMPLE DESCRIPTION , LIQUI	D SAMPLES	TIME SAMPLED	
45751-1	Rinse 1		10-20-94/1215	
45751-2	Final Rinse		10-21-94/0945	
PARAMETER		45751-1	45751-2	
Dibromochle	promethane, ug/l		<5.0	
1,1,2-Tric	nloroethane, ug/l	<5.0	<5.0	
Benzene, ug/l		<5.0	<5.0	
cis-1,3-Di	chloropropene, ug/l	<5.0	<5.0	
2-Chloroet	nylvinyl Ether, ug/l	<50	<50	
Bromoform,	ug/l	<5.0	<5.0	
2-Hexanone	, ug/l	<25	<25	
4-Methyl-2	-pentanone (MIBK), ug/l	<25	<25	
Tetrachlor	oethene, ug/l	<5.0	<5.0	
Toluene, u	g/l	<5.0	<5.0	
Chlorobenze	ene, ug/l	<5.0	<5.0	
Ethylbenzer	ne, ug/l	<5.0	<5.0	
Styrene, u	g/l	<5.0	<5.0	
Xylenes, u	g/l	<5.0	<5.0	

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		REPORT OF RESULTS			Page 3
				DATE/	
LOG NO	SAMPLE DESCRIPTION ,	LIQUID SAMPLES		TIME SAMPLED	
45751-1				10-20-94/1215	
	Final Rinse			10-21-94/0945	
PARAMETER			45751-1	45751-2	
	e Organics (8270)				
1,3-Dichlo	robenzene, ug/l		<10	<10	
1,4-Dichlo	robenzene, ug/l		<10	<10	
Hexachloro	ethane, ug/l		<10	<10	
bis(2-Chlo	roethyl)ether, ug/l		<10	<10	
1,2-Dichlo	robenzene, ug/l		<10	<10	
Bis(2-chlo	roisopropyl)ether, ug/	1	<10	<10	
N-Nitrosod:	i-N-Propylamine, ug/l		<10	<10	
Nitrobenze	ne, ug/l		<10	<10	
Hexachlorol	outadiene, ug/l		<10	<10	
1,2,4-Trick	nlorobenzene, ug/l		<10	<10	
Isophorone	, ug/l		<10	<10	
Naphthalene	e, ug/l		<10	<10	
bis(2-Chlo	roethoxy)methane, ug/l		<10	<10	
Hexachloro	cyclopentadiene, ug/l		<10	<10	
2-Chlorona	phthalene, ug/l		<10	<10	
Acenaphthy:	lene, ug/l		<10	<10	
Acenaphther	ne, ug/l		<10	<10	
Dimethylph	thalate, ug/l		<10	<10	
2,6-Dinitro	otoluene, ug/l		<10	<10	
Fluorene, u	1g/l		<10	<10	
4-Chlorophe	enyl-phenyl ether, ug/	1	<10	<10	
2,4-Dinitro	otoluene, ug/l		<10	<10	

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	REPORT OF I	RESULTS		Page 4
LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLE	LES	DATE/ TIME SAMPLED	
	Rinse 1 Final Rinse		10-20-94/1215 10-21-94/0945	
PARAMETER		45751-1	45751-2	
N-Nitrosod	halate, ug/l iphenylamine/Diphenylamine, ug/l benzene, ug/l	<10	<10	
4-Bromopher Phenanthre	nyl-phenyl-ether, ug/l ne, ug/l	<10	<10 <10	
Anthracene, ug/l Di-n-butylphthalate, ug/l Fluoranthene, ug/l		<10 <10 <10	16	
Pyrene, ug Benzidine,	/1	<10 <10 <80	<10	
bis(2-Ethy	lphthalate, ug/l lhexyl)phthalate, ug/l	33 <10		
	ug/1 thracene, ug/l orobenzidine, ug/l	<10 <10 <20	<10	
Di-n-octyl Benzo(b)fl	phthalate, ug/l uoranthene, ug/l	<10 <10	<10	
Benzo (a) py	uoranthene, ug/l rene, ug/l ,3-cd)pyrene, ug/l	<10 <10 <10	<10	
Dibenz(a,h Benzo(g,h,)anthracene, ug/l i)perylene, ug/l	<10 <10	<10 <10	
N-Nitrosod	imethylamine, ug/l	<10	<10	

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	REPORT OF RESU	LTS		Page 5
LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES		DATE/ TIME SAMPLED	
45751-1 45751-2	Rinse 1 Final Rinse		10-20-94/1215 10-21-94/0945	
PARAMETER			45751-2	
2-Chloroph			<10	
2-Nitrophe	nol, ug/l	<10	<10	
Phenol, ug	/1	58	32	
2,4-Dimeth	ylphenol, ug/l	<10	<10	
2,4-Dichlo	rophenol, ug/l	<10	<10	
2,4,6-Trichlorophenol, ug/l		<10	<10	
4-Chloro-3-methylphenol, ug/l		<10	<10	
2,4-Dinitrophenol, ug/l		<50	<50	
2-Methyl-4,6-dinitrophenol, ug/l		<50	<50	
	ophenol, ug/l	<50	<50	
4-Nitrophe	· · · · · · · · · · · · · · · · · · ·	<50	<50	
Benzyl alc	ohol, ug/l	<10	<10	
	enol (o-cresol), ug/l	<10	<10	
	<pre>enol/4-Methylphenol(m&p-cresol), ug/l</pre>	<10	<10	
Benzoic ac	• •	<50	<50	
	iline, ug/l	<20	<20	
	phthalene, ug/l	<10	<10	
	hlorophenol, ug/l	<10	<10	
2-Nitroaniline, ug/l		<50	<50	
3-Nitroani		<50	<50	
Dibenzofur	an, ug/l	<10	<10	
4-Nitroani	. •	<50	<50	
Cl-Dioxin/F				
Dioxin-2,3	,7,8-TCDD (8280), ug/l	<0.0050	<0.0050	

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		REPORT OF RESULTS			Page 6
				DATE/	_
LOG NO	SAMPLE DESCRIPTION ,	LIQUID SAMPLES		TIME SAMPLED	
45751-1				10-20-94/1215	
45751-2	Final Rinse			10-21-94/0945	
PARAMETER			45751-1	45751-2	
	es/PCB (8080)				
Aldrin, ug	/1		<0.050	<0.050	
alpha-BHC,	ug/l		<0.050	<0.050	
beta-BHC,	ug/l		<0.050	<0.050	
gamma-BHC,	ug/l		<0.050	<0.050	
delta-BHC,	ug/l		<0.050	<0.050	
Chlordane,	ug/l		<0.50	<0.50	
4,4'-DDD,	ug/l		<0.10	<0.10	
4,4'-DDE,	ug/l		<0.10	<0.10	
4,4'-DDT,	ug/l		<0.10	<0.10	
Dieldrin,	ug/l		<0.10	<0.10	
Endosulfan	I, ug/l		<0.050	<0.050	
Endosulfan	II, ug/l		<0.10	<0.10	
Endosulfan	sulfate, ug/l		<0.10	<0.10	
Endrin, ug	/1		<0.10	<0.10	
Endrin Ald	ehyde, ug/l		<0.10	<0.10	
Heptachlor	, ug/l		<0.10	<0.10	
Heptachlor	epoxide, ug/l		<0.10	<0.10	
Methoxychl	or, ug/l		<0.50	<0.50	
Toxaphene,	ug/l		<5.0	<5.0	
Aroclor-10	16, ug/l		<1.0	<1.0	
Aroclor-12	21, ug/l		<2.0	<2.0	
Aroclor-12	32, ug/l		<1.0	<1.0	
Aroclor-12	42, ug/l		<1.0	<1.0	
Aroclor-12	48, ug/l		<1.0	<1.0	
Aroclor-12	54, ug/l		<1.0	<1.0	
Aroclor-12	60, ug/l		<1.0	<1.0	

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Project: 2600.027.911/Monsanto-RCRA Pad

	REPORT OF RESULT	S		Page 7
			DATE/	
LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES		TIME SAMPLED	
45751-1	Rinse 1		10-20-94/1215	
45751-2	Final Rinse		10-21-94/0945	
PARAMETER		45751-1	45751-2	
Arsenic (70	60), mg/l	<0.010	<0.010	
Barium (601	0), mg/l	0.080	0.018	
Cadmium (60	10), mg/l	0.0055	<0.050	
Chromium (6	010), mg/l	0.019	<0.010	
Lead (7421)	, mg/l	0.18	0.0094	
Selenium (7	740), mg/l	<0.010	<0.010	
Silver (601	0), $mg/\bar{1}$	<0.010	<0.010	
Mercury (74	70), mg/l	<0.00020	0.0024	

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Project: 2600.027.911/Monsanto-RCRA Pad

	REPORT OF RESUL	LTS		Page 8
LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES		DATE/ TIME SAMPLED	
45751-4	Trip Blank Ambient Blank		10-21-94/0940	
PARAMETER		45751-3	45751-4	
Volatiles b	y GC/MS (8240)			
Chlorometh	_		<10	
Bromometha	• •	<10		
Vinyl Chlo		_ -	<10	
Chloroetha	· · · · · · · · · · · · · · · · · · ·		<10	
-	Chloride (Dichloromethane), ug/l		<5.0	
Acetone, u			<25 <5.0	
	ulfide, ug/l roethene, ug/l	<5.0 <5.0		
-	roethane, ug/l	.=	<5.0 <5.0	
-	Dichloroethylene, ug/l		<5.0 <5.0	
· ·	chloroethylene, ug/l	<5.0 <5.0		
Chloroform	- · · · · · · · · · · · · · · · · · · ·		<5.0	
	roethane, ug/l	- · · ·	<5.0	
	(MEK), ug/l	<25		
	hloroethane, ug/l	<5.0	<5.0	
	rachloride, ug/l		<5.0	
Vinyl Acet	ate, ug/l	<10	<10	
Bromodichl	oromethane, ug/l	<5.0	<5.0	
1,1,2,2-Te	trachloroethane, ug/l	<5.0	<5.0	
1,2-Dichlo	ropropane, ug/l	<5.0	<5.0	
trans-1,3-	Dichloropropene, ug/l	<5.0	<5.0	
Trichloroe	thene, ug/l	<5.0	<5.0	

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Project: 2600.027.911/Monsanto-RCRA Pad

	REPORT OF RESULTS		DATE/	Page 9
LOG NO SAMPLE DE	SCRIPTION , LIQUID SAMPLES		TIME SAMPLED	
45751-3 Trip Blan 45751-4 Ambient E			10-21-94/0940	
PARAMETER			45751-4	
Dibromochloromethane	e, ug/l		<5.0	
1,1,2-Trichloroethan	ne, ug/l	<5.0	<5.0	
Benzene, ug/l		<5.0	<5.0	
cis-1,3-Dichloroprop	ene, ug/l	<5.0	<5.0	
2-Chloroethylvinyl E	ther, ug/l	<50	<50	
Bromoform, ug/l		<5.0	<5.0	
2-Hexanone, ug/l		<25	<25	
4-Methyl-2-pentanone	(MIBK), ug/l	<25	<25	
Tetrachloroethene, u	ıg/l	<5.0	<5.0	
Toluene, ug/l		<5.0	<5.0	
Chlorobenzene, ug/l		<5.0	<5.0	
Ethylbenzene, ug/l		<5.0	<5.0	
Styrene, ug/l		<5.0	<5.0	
Xylenes, ug/l		<5.0	<5.0	

LOG NO: \$4-45751

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Mr. Julie Lowe O'Brien & Gere 5000 Cedar Plaza Parkway, Suite 211 St. Louis, MO 63128

Project: 2600.027.911/Monsanto-RCRA Pad

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION ,	QC REPORT	FOR LIQUID	SAMPLES		
45751-6 45751-7 45751-8	Method Blank Liquid Accuracy (Mean % Reco Precision (% RPD) Date Extracted Date Analyzed	overy)				
PARAMETER		45751-5	45751-6	45751-7	45751-8	45751-9
Volatiles by	7 GC/MS (8240)					
Chlorometha		<10				10.21.94
Bromomethan	ne, ug/l	<10				10.21.94
Vinyl Chlor	ride, ug/l	<10				10.21.94
Chloroethar	ne, ug/l	<10				10.21.94
Methylene (<5.0				10.21.94
	methane), ug/l					
Acetone, ug	g/l	<25				10.21.94
Carbon Dist	ılfide, ug/l	<5.0				10.21.94
1,1-Dichlor	coethene, ug/l	<5.0	94 %	11 %		10.21.94
1,1-Dichlor	coethane, ug/l	<5.0				10.21.94
Trans-1,2-D	Dichloroethylene, ${ t ug/l}$	<5.0				10.21.94
cis-1,2-Dic	chloroethylene, ug/l	<5.0				10.21.94
Chloroform,	ug/1	<5.0				10.21.94
1,2-Dichlor	coethane, ug/l	<5.0				10.21.94
	(MEK), ug/l	<25				10.21.94
1,1,1-Trich	nloroethane, ug/l	<5.0				10.21.94
	cachloride, ug/l	<5.0				10.21.94
Vinyl Aceta	· •	<10				10.21.94
Bromodichlo	promethane, ug/l	<5.0				10.21.94

LOG NO: S4-45751

Received: 22 OCT 94

Mr. Julie Lowe O'Brien & Gere 5000 Cedar Plaza

5000 Cedar Plaza Parkway, Suite 211

St. Louis, MO 63128

Project: 2600.027.911/Monsanto-RCRA Pad

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION ,	QC REPORT	FOR LIQUID	SAMPLES	
45751-5 45751-6 45751-7 45751-8 45751-9	Method Blank Liquid Accuracy (Mean % Reco Precision (% RPD) Date Extracted Date Analyzed	overy)			
PARAMETER		45751-5		45751-7	45751-9
1,2-Dichlo trans-1,3- Trichloroe Dibromochl 1,1,2-Tric Benzene, u	-	<5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0	99 % 100 %	 14 % 17 %	 10.21.94 10.21.94 10.21.94 10.21.94 10.21.94 10.21.94
2-Chloroet Bromoform, 2-Hexanone	- -	<5.0 <50 <5.0 <25 1 <25			 10.21.94 10.21.94 10.21.94 10.21.94 10.21.94
_	oethene, ug/l g/l ene, ug/l	<5.0 <5.0 <5.0 <5.0	100 % 101 %	11 % 9.9 % 	 10.21.94 10.21.94 10.21.94 10.21.94
Styrene, u Xylenes, u	g/1	<5.0 <5.0			 10.21.94 10.21.94

LOG NO: S4-45751

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION ,	QC REPORT	FOR LIQUID	SAMPLES		
45751-6 45751-7 45751-8	Method Blank Liquid Accuracy (Mean % Reco Precision (% RPD) Date Extracted Date Analyzed	very)				
PARAMETER		45751-5	45751-6	45751-7	45751-8	45751-9
Semivolatile	Organics (8270)					
	obenzene, ug/l	<10			10.22.94	10.23.94
	obenzene, ug/l	<10	70 %	4.3 %	10.22.94	10.23.94
Hexachloroet	thane, ug/l	<10			10.22.94	10.23.94
bis(2-Chlore	oethyl)ether, ug/l	<10			10.22.94	10.23.94
1,2-Dichlore	obenzene, ug/l	<10			10.22.94	10.23.94
Bis(2-chlore	oisopropyl)ether, ug/	1 <10			10.22.94	10.23.94
N-Nitrosodi	-N-Propylamine, ug/l	<10	83 %	0 %	10.22.94	10.23.94
Nitrobenzen	e, ug/l	<10			10.22.94	10.23.94
Hexachlorob	utadiene, ug/l	<10			10.22.94	10.23.94
1,2,4-Trich	lorobenzene, ug/l	<10	76 %	5.3 %	10.22.94	10.23.94
Isophorone,	ug/l	<10			10.22.94	10.23.94
Naphthalene	, ug/l	<10			10.22.94	10.23.94
bis(2-Chlore	oethoxy)methane, ug/l	<10			10.22.94	10.23.94
Hexachloroc	yclopentadiene, ug/l	<10			10.22.94	10.23.94
2-Chloronapl	hthalene, ug/l	<10			10.22.94	10.23.94
Acenaphthyl	ene, ug/l	<10			10.22.94	10.23.94
Acenaphthen	e, ug/l	<10	92 %	2.2 %	10.22.94	10.23.94
Dimethylphtl	halate, ug/l	<10			10.22.94	10.23.94
2,6-Dinitro	toluene, ug/l	<10			10.22.94	10.23.94

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REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION	QC REPORT	FOR LIQUID	SAMPLES		
45751-5 Method Blank Liquid					
45751-6 Accuracy (Mean % Rec	covery)				
45751-7 Precision (% RPD)					
45751-8 Date Extracted					
45751-9 Date Analyzed					
PARAMETER	45751-5	45751-6	45751-7	45751-8	45751-9
Fluorene, ug/l	<10			10.22.94	10.23.94
4-Chlorophenyl-phenyl ether, ug				10.22.94	10.23.94
2,4-Dinitrotoluene, ug/l	<10	92 %	0 %	10.22.94	
Diethylphthalate, ug/l	<10			10.22.94	10.23.94
N-Nitrosodiphenylamine/Diph enylamine, ug/l	<10			10.22.94	10.23.94
Hexachlorobenzene, ug/l	<10			10.22.94	10.23.94
4-Bromophenyl-phenyl-ether, ug/				10.22.94	10.23.94
Phenanthrene, ug/l	<10			10.22.94	10.23.94
Anthracene, ug/l	<10			10.22.94	
Di-n-butylphthalate, ug/l	<10			10.22.94	10.23.94
Fluoranthene, ug/l	<10 <10				
Pyrene, ug/l	<10 <10		6.9 %	10.22.94	10.23.94
		87 %		10.22.94	10.23.94
Benzidine, ug/l	<80			10.22.94	10.23.94
Butylbenzylphthalate, ug/l	<10			10.22.94	10.23.94
bis(2-Ethylhexyl)phthalate, ug/				10.22.94	10.23.94
Chrysene, ug/l	<10			10.22.94	10.23.94
Benzo(a) Anthracene, ug/l	<10			10.22.94	10.23.94
3,3'-Dichlorobenzidine, ug/l	<20			10.22.94	
Di-n-octylphthalate, ug/l	<10			10.22.94	

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LOG NO	SAMPLE DESCRIPTION ,	QC REPORT	FOR LIQUID	SAMPLES		
45751-5 45751-6 45751-7 45751-8 45751-9	Method Blank Liquid Accuracy (Mean % Reco Precision (% RPD) Date Extracted Date Analyzed	overy)				
PARAMETER		45751-5	45751-6	45751-7	45751-8	45751-9
Benzo(b)fl	uoranthene, ug/l	<10			10.22.94	10.23.94
Benzo(k)fl	uoranthene, ug/l	<10			10.22.94	10.23.94
Benzo(a)py:	rene, ug/l	<10			10.22.94	10.23.94
Indeno(1,2	,3-cd)pyrene, ug/l	<10			10.22.94	10.23.94
Dibenz(a,h	anthracene, ug/l	<10			10.22.94	10.23.94
Benzo(g,h,	i)perylene, ug/l	<10			10.22.94	10.23.94
N-Nitrosod	imethylamine, ug/l	<10			10.22.94	10.23.94
2-Chloroph	enol, ug/l	<10	80 %	2.5 %	10.22.94	10.23.94
2-Nitrophe	nol, ug/l	<10			10.22.94	10.23.94
Phenol, ug	/1	<10	81 %	2.3 %	10.22.94	10.23.94
2,4-Dimeth	ylphenol, ug/l	<10			10.22.94	10.23.94
2,4-Dichlo	rophenol, ug/l	<10			10.22.94	10.23.94
2,4,6-Tric	hlorophenol, ug/l	<10			10.22.94	10.23.94
4-Chloro-3	-methylphenol, ug/l	<10	82 %	2.4 %	10.22.94	10.23.94
2,4-Dinitr	ophenol, ug/l	<50			10.22.94	10.23.94
2-Methyl-4	,6-dinitrophenol, ug/l	L <50			10.22.94	10.23.94
Pentachlor	ophenol, ug/l	<50	64 %	6.3 %	10.22.94	10.23.94
4-Nitrophe	nol, ug/l	<50	80 %	5.0 %	10.22.94	10.23.94
Benzyl alco	ohol, ug/l	<10			10.22.94	10.23.94
	enol (o-cresol), ug/l	<10			10.22.94	10.23.94

LOG NO: \$4-45751

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Mr. Julie Lowe O'Brien & Gere 5000 Cedar Plaza Parkway, Suite 211 St. Louis, MO 63128

Project: 2600.027.911/Monsanto-RCRA Pad

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION	, QC REPORT	FOR LIQUID	SAMPLES		
45751-5 45751-6 45751-7 45751-8 45751-9	Method Blank Liquid Accuracy (Mean % Re Precision (% RPD) Date Extracted Date Analyzed					
PARAMETER		45751-5	45751-6	45751-7	45751-8	45751-9
	enol/4-Methylphen esol), ug/l	<10			10.22.94	10.23.94
Benzoic ac	id, ug/l	<50			10.22.94	10.23.94
4-Chloroan	iline, ug/l	<20			10.22.94	10.23.94
2-Methylna	phthalene, ug/l	<10			10.22.94	10.23.94
2,4,5-Tric	hlorophenol, ug/l	<10			10.22.94	10.23.94
2-Nitroani	line, ug/l	<50			10.22.94	10.23.94
3-Nitroani	line, ug/l	<50			10.22.94	10.23.94
Dibenzofur	an, ug/l	<10			10.22.94	10.23.94
4-Nitroani	line, ug/l 	<50 	 		10.22.94	10.23.94

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St. Louis, MO 63128

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REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTIO	N , QC REPORT	FOR LIQUID	SAMPLES		
45751-5 Method Blank Lique 45751-6 Accuracy (Mean % 45751-7 Precision (% RPD) 45751-8 Date Extracted 45751-9 Date Analyzed					
PARAMETER	45751-5	45751-6			45751-9
Cl-Pesticides/PCB (8080)					
Aldrin, ug/l	<0.050	68 %	1.5 %	10.22.94	10.24.94
alpha-BHC, ug/l	<0.050			10.22.94	10.24.94
beta-BHC, ug/l	<0.050			10.22.94	10.24.94
gamma-BHC, ug/l	<0.050	76 %	3.9 %	10.22.94	10.24.94
delta-BHC, ug/l	<0.050			10.22.94	10.24.94
Chlordane, ug/l	<0.50			10.22.94	10.24.94
4,4'-DDD, ug/l	<0.10			10.22.94	10.24.94
4,4'-DDE, ug/l	<0.10			10.22.94	10.24.94
4,4'-DDT, ug/l	<0.10		3.3 %	10.22.94	10.24.94
Dieldrin, ug/l	<0.10	92 %	6.0 %	10.22.94	10.24.94
Endosulfan I, ug/l	<0.050	84 %		10.22.94	10.24.94
Endosulfan II, ug/l	<0.10			10.22.94	10.24.94
Endosulfan sulfate, ug/l	<0.10			10.22.94	10.24.94
Endrin, ug/l	<0.10	104 %	4.8 %	10.22.94	10.24.94
Endrin Aldehyde, ug/l	<0.10			10.22.94	10.24.94
Heptachlor, ug/l	<0.10	70 %	1.4 %	10.22.94	10.24.94
Heptachlor epoxide, ug/l	<0.10			10.22.94	10.24.94
Methoxychlor, ug/l	<0.50			10.22.94	10.24.94
Toxaphene, ug/l	<5.0			10.22.94	



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Project: 2600.027.911/Monsanto-RCRA Pad

Sampled By: Client

REPORT OF RESULTS

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LOG NO SAMPLE DESCRIPTION	ON , QC REPORT	FOR LIQUID	SAMPLES		
45751-5 Method Blank Lique 45751-6 Accuracy (Mean % 45751-7 Precision (% RPD) 45751-8 Date Extracted 45751-9 Date Analyzed	Recovery)				
PARAMETER	45751-5	45751-6	45751-7	45751-8	45751-9
Aroclor-1016, ug/l	<1.0			10.22.94	10.24.94
Aroclor-1221, ug/l	<2.0			10.22.94	10.24.94
Aroclor-1232, ug/l	<1.0			10.22.94	10.24.94
Aroclor-1242, ug/l	<1.0			10.22.94	10.24.94
Aroclor-1248, ug/l	<1.0			10.22.94	10.24.94
Aroclor-1254, ug/l	<1.0			10.22.94	10.24.94
Aroclor-1260, ug/l	<1.0			10.22.94	10.24.94
Cl-Dioxin/Furans	•				
Dioxin-2,3,7,8-TCDD	<00050	89 %	2.2 %	10.22.94	10.24.94
(8280), ug/l					
Arsenic (7060), mg/l		104 %			10.24.94
Barium (6010), mg/l	<0.010	99 %	0 %		10.24.94
Cadmium (6010), mg/l	<0.050	96 %	1.0 %		10.24.94
Chromium (6010), mg/l	<0.010	96 %	1.0 %		10.24.94
Lead (7421) , mg/l	<0.0050	104 %	1.9 %		10.24.94
Selenium (7740), mg/l	<0.010	105 %			
Silver (6010), mg/l	<0.010	92 %			
Mercury (7470), mg/l	<0.00020	98 %	2.0 %		10.24.94

Methods: EPA SW-846

Final Page Of Report

	SAVANNALL	Laudha	II ORILU	
	& ENVIRONMENT	AL SERVICES	S, INC.	

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

T 51 he A avan 3140 : (912 58

2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (904) 878-3994

414 Southwest 12th Avenue, Deerfield Beach, FL 33442 Phone: (305) 421-7400

900 Lakeside Drive, Mobile, AL 36693 Phone: (205) 666-6633

6712 Benjamin Road, Suite 100, Tampa, FL 33634 Phone: (813) 885-7427

ax	(9	- 100
Fax	(904)	878-95
Fax	(305)	421-25
Fax	(205)	666-66
Fax	(813)	885-70

P.O. NUMB		26.00 027 911 1	ROJECT NAME MONSONIO - RCR	A F	PAD .	MAT	DE			38	REQUIRE	D ANALYSES		PAGI	1	OF /
CLIENT NA JBRIE CLIENT AD SOOO C SAMPLER(S JUL) SAMF	ME N F GE DRESS SOME / S) NAME(S) PLING	CITY ONE SAMPLE IDEN RINSE 1	TELEPHONE/FAX NO. (3,4) 840-4550 Y, STATE, ZIP CODE ZII Sr. Lows, Maint Project Manage LULI & LOWE NTIFICATION	/30 163	128 128	X X X X X X X X X X X X X X X X X X X	10 8 2 K	Succession	Drok'N 443		Memory Company			REPORT DUE	EXPEDITEI) TAT .
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			LADOKAI OI AL SERVICES, INC AIN OF CUSTOD							414 So 900 La	outhwest 1 keside Dr	Plaza Driv 12th Aver rive, Mob	ile, AL 3669	314(see, FL 32301 ld Beach, FL 33- l3 npa, FL 33634	: (912 Phone: (904) 142 Phone: (305) Phone: (205) Phone: (813)	421-7400 666-6633	ax (9 Fax (904) 87 Fax (305) 42 Fax (205) 66 Fax (813) 88
P.O. NUMBER PROJECT NAME 2GUO:027.911 MONSANTO RCRA PAIS CLIENT NAME TELEPHONE/FAX NO.							IX	REQUIRED ANALYSES								PAGE 1	OF 1
CLIENT NAI BRIB CLIENT ADI 5000 SAMPLER(S	N 4 GB	RE ENGINES	TELEPHONE/FAX N CS (B) 4) BLZ 4 CITY, STATE, ZIP CODE J STE CII ST (EU) CLIENT PROJECT MANA JULIE J LOW DENTIFICATION	50/3	246/	TYPE X SELECTION OF SELECTION O	/ 30 S		SKOZYO	133	3 3 3	100	K /	//	//		ARD TAT
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